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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,483	09/30/2003	Nimal Gamini Senarath	0583P48US01	1539

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CANADA

EXAMINER

NGUYEN, KHAI MINH

ART UNIT	PAPER NUMBER
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2687

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,483

Applicant(s)

SENARATH ET AL

Examiner

Khai M. Nguyen

Art Unit

2687

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-20, 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The references listed in the Information Disclosure Statement filed on April 7, 2004 have been considered by the examiner (see attached PTO-1449 form or PTO/SB/08A and 08B forms.)

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawabata et al. (U.S.Pat-6400955).

Regarding claim 1, Kawabata teaches a method for reducing interference between adjacent cells of a cellular radio system (fig.1, col.6, lines 29-34), comprising:

(a) in a cell of said cellular radio system, transmitting traffic along a downlink beam to a first user terminal during a first time slot (fig.2-3, 16-18, abstract, col.2, line 19 to col.3, line 12, col.6, line 39 to col.7, line 23);

(b) rotating said downlink beam by a predetermined angle (fig.15, 20, col.2, lines 4-18, col.3, lines 29-52);

(c) transmitting along said downlink beam to a further user terminal during a second time slot (fig.2-3, 16-18, col.2, line 19 to col.3, line 12, col.6, line 39 to col.7, line 23); and

(d) repeating steps (a), (b), and (c) until the entire area of cell is covered (fig.14, abstract, col.1, line 13-41).

Regarding claim 2, Kawabata teaches the method of claim 1, wherein said predetermined angle is a part of the width of said downlink beam (fig.15, 20, col.2, lines 4-18, col.3, lines 29-52).

Regarding claim 3, Kawabata teaches the method of claim 1, wherein said steps (a) through (d) are performed in a cyclic manner (fig.14, abstract, col.1, line 13-41).

Regarding claim 21, Kawabata teaches a method for controlling interference between first and second traffic carrying beams of adjacent cells of a cellular radio system (fig.1, col.6, lines 29-34, col.10, lines 6-32), said method comprising:

(a) rotating a first beam along a plurality of successive orientations according to a first rotation scheme (fig.16-18, abstract, col.2, line 19 to col.3, line 12);

(b) rotating a second beam along a plurality of successive orientations according to a second rotation scheme (fig.2-3, col.2, line 19 to col.3, line 12, 16-18, col.6, line 39 to col.7, line 23);

(c) identifying different timeslots with varying quality created by said first and second rotation schemes (fig.2-3, 16-18, col.6, line 39 to col.7, line 23); and

(d) selecting a reception timeslot from said different timeslots that corresponds to an optimal C/I ratio for user equipment residing within a location covered by both said first and second beams (fig.2-3, 16-18, abstract, col.6, line 29 to col.7, line 23).

Allowable Subject Matter

3. Claims 4-20, 22-23 are allowed.

Regarding claim 4: The following is an examiner's statement of reasons for allowance: Prior art teaches in a cellular communication system of the type where base stations are equipped with directional antennas that can assume one of I number of directions of transmissions where $I \geq 2$, a method of increasing downlink coverage and traffic capacity. However, prior art fails to teaches a first base station, successively directing a first radio beam in I number of directions $A(i)$ according to a first beam rotation scheme, where $i \in [2, I]$; and at a second base station adjacent to said first base station, successively directing a second radio beam in I number of directions $B(i)$ according to a second beam rotation scheme; wherein said first beam rotation scheme and said second beam rotation scheme form J number of reception timeslots $T(j)$ for

user equipment located within said first radio beam and said second radio beam, each of said reception timeslots T(j) having different channel conditions, and said second base station allocating said reception timeslots T(j) according to quality of service requirements of each said user equipment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "Comments on Statement of Reason for Allowance."

Citation of Pertinent Prior Art

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Munoz et al. (U.S.Pub-20050068230) discloses Reducing co-channel interference in satellite communications systems by antenna re-pointing.

Proctor, Jr. et a. (U.S.Pub-20050143132) discloses Method and apparatus for performing directional re-scan of an adaptive antenna.

Wang (U.S.Pat-6339708) discloses Method and apparatus for communications resource allocation for a wireless communications system.

Dartois (U.S.Pat-6181955) discloses method of transmitting a control signal by a base station of a digital cellular mobile radio system and a corresponding base station.

Sydor (U.S.Pub-20020090979) discloses Method and wireless communication hub for data communications.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571.272.7923. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571.272.7922. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Khai Nguyen
Au: 2687

8/13/2005

LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER